

## TISSUE DISPENSING COVER

### FIELD OF THE INVENTION

This invention relates to a dispensing cover for a tissue dispenser. More particularly the invention is concerned with so called '*sequential dispensers*' for dispensing articles which are provided as individual interleaved or separably connected sheets and can pop-up above the top of the dispenser opening when the preceding article is removed.

### BACKGROUND OF THE INVENTION

Dispensers for articles such as tissues are well known in the art. Such articles may be supplied dry or soaked/impregnated in liquid or lotion e.g. a cleaning agent, a solvent, a skin treating preparation, etc. Typically tissues have a generally rectangular shape and are supplied as separably connected sheets or interleaved, discrete sheets stacked in a variety of different configurations, to facilitate the so-called *pop-up* effect, where each tissue has a leading portion that is first to pass through the opening, and a trailing portion that later passes through the opening i.e. a leading tissue removed from a package drags a leading edge of a sequential tissue into a standby position so it extends at a convenient removal position.

Most containers for such articles typically are in soft-pack form or in box form, i.e. in the shape of a parallelepiped or cylindrical (e.g. in the case of separably connected tissues in a reel). In a pop-up dispenser, a leading tissue (may also

referred to as a *first tissue* or a *standby tissue*) usually extends through an opening of the dispenser into an elevation above that of the dispenser. The user grasps the exposed, leading portion of the leading tissue, without the necessity of inserting fingers through the opening.

A common arrangement is to provide a narrow dispensing opening through which the tissues are pulled, one at a time, by the user. The narrow opening has two main purposes:

A. At an interleaved arrangement, the trailing portion of a first tissue to be dispensed overlaps the leading portion of the next tissue to be dispensed. As the first tissue is withdrawn by the user, the leading portion of the next tissue is pulled through the opening, for later dispensing. The tissues are folded against one another in a variety of configurations so that the friction of the trailing portion of the withdrawn sheet against the succeeding sheet pulls the leading portion of the succeeding sheet through the opening. A narrow opening is thus required to give rise to sufficient friction force to ensure separating of the interleaved sheets.

A narrow gap at a dispensing opening for separably connected sheets, is required for effective separation of the sheets, i.e. tearing along a perforation line. At times, facing edges of the dispensing opening are pointed, to improve separation of the sheets.

B. In case of moisturized tissues the narrow opening may further serve to squeeze the tissues as they are retracted through the dispenser opening, to thereby ensure that the tissues are not dripping-wet and further to retain sufficient liquid in the package.

At an initial position of a tissue package, of any of the above types, the leading edge of the first tissue is disposed within the package and it is necessary to introduce the leading edge through the narrow passage of the dispensing opening. This is also the case where a refill tissue pack is introduced into the package/container and also if for some reason the leading edge of the first tissue detaches from the grabbing dispensing opening and falls back into the package.

One problem frequently encountered in pop-up dispensing packages of the prior art is that the opening through which the tissue is dispensed must be large enough to allow the consumer to reach his or her fingers therethrough to grasp the tissue and begin the pop-up dispensing process. However, as herein above mentioned, the opening must be small enough to constrict the tissues dispensed therethrough, so that a tissue may be separated from succeeding tissues.

According to some arrangements a narrow dispensing opening is provided by means of two or more flaps projecting towards each other, leaving an interstice therebetween, where the surfaces may be deformed to allow a user to introduce his/her fingers there through, so as to pull the leading edge of the first tissue. This however, is inconvenient and may even result in injury of the users fingers.

Other arrangements are disclosed in some U.S. Patents, for example:

U.S. Patent No. 5,516,001 discloses a dispensing opening having a large aperture and an arcuately shaped smaller aperture which are spaced apart and connected by an isthmus connection. Tissues may be easily withdrawn by the user through the large aperture, and fed through the isthmus connection to small aperture. Thereafter, the tissues may be dispensed through the small aperture in a pop-up mode.

U.S. Patent No. 6,499,626 discloses a dispensing element including at least one larger aperture and a smaller aperture entirely separated from one another. A closure or lid can usefully be incorporated whereby the articles may easily be reached from above the top surface of the dispenser through the larger aperture, and fed through from underneath the top surface to the small aperture. Thereafter, the articles may be dispensed through the small aperture, e.g., in a pop-up mode. The arrangement of the elements is conducive to one-handed dispensing of articles from the dispenser.

U.S. Patent No. 6,299,017 discloses a dispensing face for a dispensing unit wherein the dispensing face comprises lateral outer edges and longitudinal outer edges and not less than two orifices. The first orifice and the second orifice are

coplanar, the second orifice being independent of the first orifice and being disposed at a distance not greater than 20 millimeters from the first orifice.

U.S. Patent No. 4,526,291 discloses a lid selectively movable between a first position covering at least a portion of the top and a second position removed from the top. The lid includes a first portion adapted to cover the dispensing opening when the lid is in the first position thereof and a second portion adapted to cover the slit when the lid is in the first position thereof. The second portion of the lid is integrally but flexibly connected to the first portion of the lid, such that when the lid is in the first position thereof the second portion of the lid may be selectively pivoted with respect to the first portion of the lid away from the top, thereby to uncover the slit.

It is an object of the present invention to provide a dispenser for pop-up tissues comprising a small tissue dispensing aperture and a normally closed manipulating aperture whereby a user's fingers may be introduced through said manipulating aperture to have access to the tissues within the package and for introducing a leading edge of the first tissue through the tissue dispensing aperture.

## SUMMARY OF THE INVENTION

The invention according to one of its embodiments calls for a dispenser for a tissue package, said dispenser comprising a tissue dispensing aperture and a manipulating opening, both opening into a tissue-containing space of the package; said tissue dispensing aperture is sized for dispensing one tissue at a time while separating a duty tissue from a successive tissue; wherein said manipulating opening is normally closed by a flap and is deformable to allow introduction of a user's fingers into the tissue-containing space, and wherein said tissue dispensing aperture and the manipulating opening are coverable.

According to another aspect of the invention there is provided a tissue package (of any type) fitted with a dispenser of the above type, and according to

still another aspect of the invention there is provided a tissue package cover fitted with a dispenser of the above referred to type.

The primary object of the invention is to provide a tissue dispenser fitted with a tissue dispensing aperture designed to facilitate dispensing of one tissue at a time, and a manipulating opening which is normally covered/closed by a flap which is easily deformable to facilitate introduction of a user's fingers into the tissues received within the package, so as to grab a leading edge of the duty tissue (i.e. a tissue first to be dispensed in a so called '*pop-up*' manner) and introduce it through the tissue dispensing aperture. This is required each time a new lot of tissues are placed in the package or incase the duty tissue disengages from the tissue dispensing aperture and drops into the package. However, at a normal state the manipulating is covered to eliminate/reduce evaporation of moisture from the tissues.

A variety of modifications are possible, all of which fall within the scope of the present invention. Examples of such modifications are:

- o The shape and position of the tissue dispensing aperture may vary and it may be formed with different friction enhancing arrangements.
- o The manipulating opening may be covered with one or two (or more) flaps, the shape, size and operation of which may differ. For example, the flap may be liftable or depressible; the flap may be deformable towards or away from the tissue dispensing opening, etc.
- o The lid covering the tissue dispensing aperture and the manipulating opening may assume different shapes and may be opened/closed in a variety of different ways.

In a preferred embodiment, the flap is hinged to a frame on the dispenser by coaxial hinges, and the dispensing aperture is defined by a first edge movable with said flap, and a second edge which is fixed to the frame, typically provided by a projecting tab. Thus, the open area provided by the aperture is at a minimum when the flap is closed and the first and second edges are in proximity. When the flap is

moved to an open position, the first edge is distanced from the second edge, substantially increasing the open area available for enabling the tissue to be manipulated and introduced thereinto.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

In order to understand the invention and to see how it may be carried out in practice, some embodiments will now be described, by way of non-limiting examples only, with reference to the accompanying drawings, in which:

Fig. 1A is a perspective view of a tissue box integrally fitted with a dispensing cover according to an embodiment of the present invention, the lid in its open position and a leading edge of a stand-by tissue projecting through the tissue dispensing aperture;

Fig. 1B illustrates a user's fingers introduced through the manipulating opening of the cover seen in Fig. 1;

Fig. 2 illustrates a tissue box fitted with cover which in turn is fitted with tissue dispenser according to an embodiment of the present invention;

Figs. 3A to 3C are perspective views of tissue box covers, each fitted with a tissue dispenser according to other embodiments of the present invention;

Fig. 4 illustrates a tissue box fitted with cover which in turn is fitted with tissue dispenser according to a preferred embodiment of the present invention, wherein the flap of the dispenser is in the open position;

Fig. 5 illustrates the embodiment of Fig. 4, with the flap of the dispenser in the closed position; and

Figs 6A and 6B illustrate in cross-section the flap and hinge arrangement of the embodiment of Fig 4 when the flap is closed and open, respectively.

## DETAILED DESCRIPTION OF THE INVENTION

In Fig. 1A there is illustrated a tissue container generally designated 10 which in the present embodiment is a rigid container, made for example of plastic material fitted at a bottom thereof with an openable cover 12 for introducing a pack of tissues for pop-up dispensing. Thus tissues may be separate tissues arranged in a interleaved manner or in a zig-zagging pattern separately connected to one another about a perforated tear line.

The arrangement with such tissues is that upon pulling a leading edge 16 of a standby tissue (by using the term "*standby tissue*" is referred to a first tissue in a pack of tissues which is to be removed from the container). The standby tissue is then withdrawn through a dispensing opening of the container whilst it detaches from the sequential tissue which becomes in turn a duty tissue with its leading edge 16 now projecting from a dispensing opening of the container.

Reverting now to the embodiment of Figs. 1A and 1B, the package 10 is formed at its top face 20 with a dispenser generally designated 24 comprising a tissue dispensing aperture 26 which is in the form of a narrow arcuate slit and a manipulating opening 28 normally covered by a flap 30 extending thereover. Flap 30 is fitted at a free end thereof with a pulling tab 32 to facilitate easy grabbing by one hand for deforming the flap 30.

Cover flap 30 is integrally molded with the entire dispenser 24 and is deformable about a so-called 'integral hinge' at 33. According to another embodiment (not shown), the hinge may be a non-integral hinge, i.e. a pivot hinge.

A lid 34 is hingedly connected at 36 to the top portion 20 of the container, said lid being displaceable between an open position as in Figs. 1A and 1B and a closed position (not seen) where it sealingly covers both the tissue dispensing aperture 26 and the manipulating opening 28 whereby sealing may be obtained, e.g. by a peripheral rim 38.

Opening and closing of the lid 34 may be facilitated, for example, by a depressible locking member 40 engageable with a latch 42 at a free end of the lid 34

whereupon depressing the locking member 40 lid 34 snaps into the open position by means of a biasing member (not shown), as known *per se* in the art.

It is appreciated that at an initial state, the tissue dispensing aperture 26 and the entire manipulating opening 28 may be further provided with a removable sealing patch to retain moist and liquid within the container and also useful as a temper proof seal and evidence.

In the illustrated embodiments the arrangement is such that at the closed position of lid 34 there is a gap formed between the tissue dispensing aperture 26 and the lid, so as to allow sufficient space for the projecting leading edge 16 of the duty tissue.

At an initial stage upon purchasing a tissue package, the tissues are usually in a sealed package received within the tissue pack or are provided attached thereto or as refill packs, whereby it is required to introduce the leading edge 16 of the duty tissue through the tissue dispensing aperture 26. This procedure would also be required if for some reason the leading edge 16 would disengage from the tissue dispensing aperture 26 and would fall into the space below within the package. In either of these instances, it is thus possible to deform the flap 30 by pulling at tab 32 whereby a user's fingers may be introduced into the manipulating opening 28 as illustrated in Fig. 1B for grabbing the leading edge of a duty tissue and introducing it through the tissue dispensing aperture 26.

Turning now to Fig. 2, there is illustrated a modification of the invention wherein the tissue dispenser generally designated 50 is integrally formed on a tissue box cover 56 mountable on a tissue box 58. In the embodiment of Fig. 2 the tissue dispensing aperture 60 is formed with friction enhancing means which in the present example is a narrow zig-zagging slot thereby ensuring improved grip of the leading edge (not shown) which on the one hand improves separation between a duty tissue and a following proceeding tissue and, on the other hand, reduces the likelihood for the leading edge to fall through the tissue dispensing aperture 60.

Whilst the arrangement of Fig. 2 illustrates a dispenser according to the invention as an integral part of a cover for a rigid tissue container, other



embodiments are possible as well such as applying a dispenser to a disposable flexible tissue pack, (not shown) e.g. by adhering same to the package.

Attention is further directed to rip 61 which is illustrated in dashed lines since at the normally closed position of the flap 64 said rip 61 extends under a peripheral edge 66 of the manipulating opening. The rip 61 serves to prevent unintentional deformation of the flap 64 upon pulling a tissue through the tissue dispensing opening 60.

Turning now to Figs. 3A-3C there are illustrated modifications of a dispensing cover in accordance with the present invention. In Fig. 3A, the dispensing cover generally designated 70 is similar to the previous embodiment of Fig. 2, however, the tissue dispensing aperture 72 is formed on the deformable portion of the flap 76 covering the manipulating opening 78 and further, rather than a pulling tab as in the previous embodiments, there is provided a depression (or a recess) at 80, whereby the flap 76 may be deformed to expose the opening 78 for introduction of a user's finger.

Turning now to Fig. 3B, there is illustrated a different modification whereby the dispenser 86 comprises a tissue dispensing opening aperture 88 and a manipulating opening covered by two flaps 90A and 90B extending towards one another, typically being deformable to expose the manipulating opening by depression into the space of the tissue box (not shown).

This arrangement however, is more likely to be used in conjunction with a rigid tissue box.

In the embodiments of Fig. 3C, there is illustrated a dispensing cover 96 wherein the dispenser 98 is similar to the embodiment of Fig. 1, however, the lid 100 extends over a major portion of the cover 102 and is manually displaced into the open position as in Fig. 3C. It is further noted that the tissue dispensing aperture 104 is in the shape of an inverted Y-like shape.

A preferred embodiment of the invention, illustrated in Figs 4 and 5, comprises all the elements and features of the embodiment of Figs. 1A and 1B as described herein, with the following differences, *mutatis mutandis*. According to

this embodiment, a tissue container generally designated 10', typically in the form of a rigid or semi rigid container and made for example of plastic material, is fitted at a top thereof with an openable cover 12' for introducing a pack of tissues for pop-up dispensing. The cover 12' is formed at its top face 20' with a dispenser generally designated 24' comprising a tissue dispensing aperture 26' and a manipulating opening 28' normally covered by a flap 30' extending thereover. Flap 30' is fitted at a free end thereof with a pulling tab 32' to facilitate easy grabbing by one hand. Alternatively, rather than a pulling tab 32', there is provided a depression or a recess (not shown), whereby the flap 26' may be deformed to expose an opening (not shown) for introduction of a user's finger, which can then pull out the flap 30'.

Cover flap 30' is preferably integrally molded with the entire dispenser 24' and preferably also with the cover 12'. In other embodiments, the cover 12' may also be integrally molded with the box 10'. The flap 30' is pivotable about a pair of so-called 'integral hinges' at 33', allowing the flap 30' to deform and rotate about the hinges. Alternatively, a pair of 'film hinges' is provided at 33', in which case the thickness of material at the film hinge is a little less (shown at T in Figs. 6A and 6B) than of the frame 37' of the dispenser 24' that surrounds the opening 28', and thus enables the cover flap 30' to preferentially pivot about this hinge. According to another embodiment (not shown), the hinge may be a non-integral hinge, i.e. a pivot hinge.

The dispensing aperture 26' is in the form of a narrow arcuate slit, having an inner edge 50' defined by a arcuate tab 54' that projects from an end 29' of the opening 28', and is flanked by end edges 57'. The end edges 57' are adjacent to the hinges 33', which are mutually aligned co-axially. The outer edge 55' of the aperture 26' is comprised on the flap 30' and the free ends 56' of the outer edge 55' meet the end edges 57' at the hinges 33'. The outer edge 55' and the inner edge 50' are preferably arcuate and substantially concentric (when the flap is in the closed position).

When the flap 30' rotates about hinges 33' to the open position, the outer edge 55' moves together with the flap 30', while the inner edge 50' remains in place fixed on the frame. The effective open area provided by the aperture 26' thus increased dramatically as illustrated in Fig 4, by an amount correlated to the area of the tab 54', since the aperture 26' is no longer bounded by the inner edge 50', but rather by a line connecting the hinges 33' together, or the upper surface of the tab 54'. This expansion in area when the flap 30' is open greatly facilitates the manipulation and introduction of the leading edge of the tissue through the tissue dispensing aperture 26', either for the standby tissue, or for a duty tissue should for some reason the leading edge thereof be disengaged from the tissue dispensing aperture 26' and fall into the space below within the package. In either of these instances, it is thus possible to open the flap 30' by pulling at tab 32' whereby a user's fingers may be introduced into the manipulating opening 28' for grabbing the leading edge of a duty tissue and introducing it through the tissue dispensing aperture 26'. When the flap 30' is closed, as illustrated in Fig. 5, the narrow slit now provided by aperture 26' provides traction to the duty tissue and enables the tissue to be removed in a similar manner to that described above for other embodiments, *mutatis mutandis*.

The arrangement of the aperture 26' of this embodiment, wherein the effective open area when the flap 30' is open is much greater than when it is closed means that the aperture 26' can accommodate two ostensibly conflicting requirements, that of providing a small open area for dispensing tissues, and that of providing a large area for facilitating the manipulation of a leading tissue therethrough at various times such as the beginning of a new tissue pack, for example. Thus, the aperture 26' can be designed such that the open area thereof when the flap 30' is closed is very small, providing the required friction to the duty tissue, while in no way making difficulties for the insertion of a leading edge of a tissue therethrough whenever required, when the flap 30' is open.

Furthermore, the tab 54' provides a static anchor point over which the leading edge of the duty tissue may be partially wrapped while the flap 30' is open.

In this manner, as the flap 30' is closed the leading edge of the tissue is held in place over the tab 54' by friction, and thus preempting the possibility of the leading edge falling back into the box while the flap 30' is being closed, and without having to hold the leading edge with another hand during this operation.

Preferably, the flap 30' is substantially circular up to the hinges 33', and comprises a circumferential cylindrical wall 31' projecting upwardly, such that the edge 38' thereof is substantially co-planar with the frame 37' of the opening 28'. Thus, the main body of the flap 30' is recessed with respect to the frame 37' when in the closed position, which facilitates the grabbing of tab 32' by the user. Moreover, this arrangement also provides the hinges 33' with a 90° bend when in the closed position, and serves to further increase the open area of aperture 26' when in the open position by further distancing the outer edge 55' from the tab 54'.

Preferably, the flap 30' comprises a lock arrangement in the form of a snap 35' at an end thereof opposed to said outer edge 55' which cooperates with an underside of said frame 37' when the flap is in the closed position. The locking arrangement locks the flap in place, preventing the flap from being opened by the pulling force that is normally exerted on the duty tissue. The lock arrangement also dissuades users from using the manipulating opening 28' rather than the aperture 26' for removing tissues. The lock arrangement is disengaged by pulling the tab 32' with sufficient force, which is typically greater than the force required to take a tissue from the aperture 26'.

A lid (not shown) is hingedly connected at 36' to the top portion 20' of the container, in a similar manner to that described herein for the embodiment of Figs 1A and 1B, *mutatis mutandis*. In the preferred embodiment the arrangement is such that at the closed position of lid there is a gap formed between the tissue dispensing aperture 26' and the lid, so as to allow sufficient space for the projecting leading edge of the duty tissue.

Similarly, opening and closing of the lid may be facilitated, for example, by a depressible locking member (not shown) that fits in the recess 42' and is engageable with a latch (not shown) at a free end of the lid, in a similar manner to that described herein for the embodiment of Figs 1A and 1B, *mutatis mutandis*. Also, the tissue dispensing aperture 26' and the entire manipulating opening 28' may be further provided with a removable sealing patch to retain moisture and liquid within the container, and is also useful as a tamper proof seal and evidence.

Optionally, aperture 26' may be provided with friction enhancing means, such as for example by serrating the inner edge 50' and/or the outer edge 55' of aperture 26', thereby ensuring improved grip of the leading edge (not shown) which on the one hand improves separation between a duty tissue and a following proceeding tissue and, on the other hand, reduces the likelihood for the leading edge to fall through the tissue dispensing aperture 26'.

Whilst the arrangement of Figs. 4, 5, 6A and 6B illustrate a dispenser according to the invention as an integral part of a cover for a rigid tissue container, other embodiments are possible as well such as applying a dispenser to a disposable flexible tissue pack, (not shown) e.g. by adhering same to the package.

Whilst some embodiments have been described and illustrated with reference to some drawings, the artisan will appreciate that many variations are possible which do not depart from the general scope of the invention, *mutatis mutandis*.